

THE CONTRIBUTION OF SUBTERRANEAN CLOVER BURR
TO THE DIET OF SHEEP AND CATTLE

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Sheep and cattle grazing subterranean clover based pastures in southern Australia usually consume mature grass and clover residues, with very limited green herbage, from late spring until the autumn break. The clover burr is 45-55% digestible and contains over 4% nitrogen (Hume et al. 1968) and seed yields in pasture can be over 1000 kg/ha. However, much of the burr is buried and its dietary value has not been well established. This paper examines the contribution of subterranean clover burr to the diet of sheep and cattle grazing lucerne and clover pastures in southern New South Wales.

At Wagga Wagga, oesophageally fistulated wethers or ewes rotationally grazed (3 week graze/6 week spell) lucerne-subterranean clover pastures (LC) and diet samples were obtained on days 3, 7, 14 and 21 of nineteen grazing rotations from 1975 to 1977. Oesophageally fistulated steers grazed adjacent LC or subterranean clover (C) pastures and diet samples were obtained on days 3 or 21 of each alternate rotation grazing period, or every 21 days when pastures were continuously grazed (winter to mid-spring) in 1976 and 1977. The sheep stocking rate averaged 11/ha, and the cattle 2/ha. The botanical composition by weight of each diet sample was assessed (Hall et al. 1980) and green pasture available was measured on the same day as diet samples were collected. The clover burr (seed and pod) values for each season are an average of 32-96 samples for the sheep plots or 6-15 samples for the cattle plots.

Table 1 Subterranean clover burr (%) in the diet of sheep and cattle grazing lucerne-subterranean clover (LC) and subterranean clover (C) pastures, and average green herbage available (kg/ha) 1975-77

Year Season	1975					1976				1977			
	S	A	W	S	S	A	W	S	S	A	W	S	S
Sheep LC	7.5	0	0.2	1.2	1.1	3.2	15.7	-	0.1	0	0	0.7	-
Cattle LC	-	-	-	-	-	1.6	5.2	1.6	0.8	0.2	0	0	0
Cattle C	-	-	-	-	-	5.3	11.6	1.8	0.7	0.1	0.3	0.4	2.5
Green herbage	100	905	920	2695	560	340	75	2085	355	1130	1790	1540	160

Winter 1976 was the only season when clover burr contributed more than 10% of the diet (Table 1). Highest average daily values were in mid-July 1976, during a severe drought (autumn-winter rainfall 20% of the mean) when no green herbage remained - diets containing 21.0%, 11.2% and 14.1% burr on sheep LC, cattle LC and C respectively. When the proportion of burr in the diet was highest, digestibility of organic matter consumed was lowest at 37%, but diets always contained more than 2.5gN/100g digestible organic matter (Hall et al. 1980; D.G. Hall, unpublished data). Thus, when clover burr contributes most to the diet, the intake of energy rather than nitrogen is likely to be limiting animal production.

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